

REMARKS

A. Request for Reconsideration

Applicant has carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the position that patentable subject matter is present. Applicant respectfully requests reconsideration of the Examiner's position based on the amendments to the claims and the following remarks.

B. The Invention

The present invention is directed to an image-processing apparatus that enables precise frequency characteristic operation, suppresses deterioration of graininess caused by frequency processing and obtains sufficient emphasis.

In one of the novel aspects of the invention, the image-processing apparatus contains a differential processing section that generates a differential image-signal obtained from differences between unsharp image signals and converted unsharp image signals.

C. Claim Status and Amendments

Claims 1, 3-14, 16-28, 30-40, 43-48, 73, 74 and 76-81 are presented for further prosecution.

Claims 1 and 14 have been amended to replace the phrase "obtained from" with "based on". This amendment has been made for clarification purposes and no new matter has been added. Applicants respectfully request entry of this amendment since it is believed that no further search is required.

D. The Office Action

Claims 1-40, 43-48, 73, 74 and 76-81 had been rejected as being anticipated by Ito (US 5,991,457).

On page 4 of the Office Action, the Examiner had taken the position that equations 6 and 13 of Ito inherently teach the claimed differential image signals. This rejection was made because equations 6 and 13 of Ito teach differential image signals obtained from differences between unsharp image signals, while claims 2 and 15 recite that the differential image signals can be obtained in the same manner.

1. Ito does not teach differential image signals based on differences between unsharp image signals and converted unsharp image signals

Claims 2 and 15 which were relied upon by the Examiner to interpret the differential image signals have been cancelled.

The independent claims recite that the differential image signals are based on differences between unsharp image signals and converted unsharp image signals (the converted unsharp image signals being obtained by the conversion processing section).

Ito does not teach or suggest the claimed differential image signals. Instead, equations 6 and 13 of Ito teach that the differential image signals are derived from a pair of unsharp image signals in adjacent frequency bands (col. 14, lines 35-57). When the differential signals are generated using unsharp signals only, the density information residing in the original image signal is lost. As a result, there is insufficient frequency emphasis in the low density area and large amounts of noise are included. Ito thereafter applies conversion processing to the differential signals (col. 14, line 58 to col. 15, line 5)

In contrast to Ito, the present invention reduces the amount of noise in the low density area thereby producing an x-ray image that clearly depicts the human body. The advantages of the invention are achieved because the conversion processing section first generates converted unsharp signals, and then the differential processing section generates differential signals based on the converted unsharp signals and the unsharp signals. As a result, frequency emphasis in the low density area is sufficient and noise is suppressed.

Applicants respectfully submit that the present invention is not anticipated by Ito because Ito does not teach or suggest the claimed differential processing section.

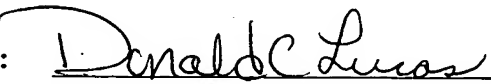
E. Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any extensions of time or fees be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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